

Atty. Dkt. No. 083847-0235

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Chad A. MIRKIN et al.

Title: PEPTIDE AND PROTEIN ARRAYS AND DIRECT-WRITE
LITHOGRAPHIC PRINTING OF PEPTIDES AND PROTEINS

Appl. No.: 10/788,414

Filing Date: 03/01/2004

Examiner: Leon Yun Bon Lum

Art Unit: 1641

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop IDS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56. A copy of each listed document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

RELEVANCE OF EACH DOCUMENT

All of the documents are in English.

Applicants respectfully request that any listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date October 14, 2005

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 672-5300
Facsimile: (202) 672-5399

By Alexey Saprygin **ALEXEY
SAPRYGIN**
REG. # 56,439

J. Steven Rutt
Attorney for Applicant
Registration No. 40,153

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Substitute for form 1449B/PTO
**INFORMATION DISCLOSURE
 STATEMENT BY APPLICANT**

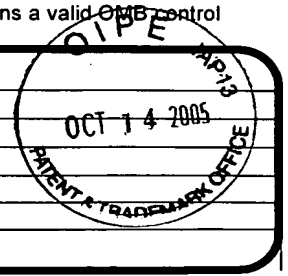
Date Submitted: October 11, 2005

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number 10/788,414
 Filing Date 03/01/2004
 First Named Inventor Chad A. Mirkin
 Group Art Unit 1641
 Examiner Name Leon Yun Bon Lum
 Attorney Docket Number 083847-0235



U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	B1	5,039,458		Braatz et al.	08-13-1991	
	B2	5,747,334		Kay et al.	05-05-1998	
	B3	5,858,801		Brizzolara	01-12-1999	
	B4	6,103,479		Taylor	08-15-2000	
	B5	6,270,946		Miller	08-07-2001	
	B6	6,573,369		Henderson et al.	06-03-2003	
	B7	6,635,311		Mirkin et al.	10-21-2003	
	B8	6,642,129		Liu et al.	11-04-2003	
	B9	6,674,074		Schwartz et al.	01-06-2004	
	B10	6,827,979		Mirkin et al.	12-07-2004	
	B11	2002/0122873	A1	Mirkin et al.	09-05-2002	
	B12	2003/0068446	A1	Mirkin et al.	04-10-2003	
	B13	2003/0162004	A1	Mirkin et al.	08-28-2003	
	B14	2003/0185967	A1	Eby et al.	10-02-2003	
	B15	2004/0008330	A1	Mirkin et al.	01-15-2004	
	B16	10/307,515		Mirkin et al.	12-02-2002	
	B17	10/375,060		Dupeyrat et al.	02-28-2003	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	B18	WO	96/31625		Cytogen	10-10-1996		
	B19	WO	00/04390		Zyomyx, Inc.	01-27-2000		
	B20	WO	02/45215	A2	Mirkin et al.	06-06-2002		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	B21	AGARWAL, G., et al., "Dip-Pen Nanolithography in Tapping Mode", J. Am. Chem. Soc., vol. 125, pp. 580-583 (2003).	
	B22	BLAWAS, A. S., et al., "Protein patterning", Biomaterials, vol. 19, pp. 595-609 (1998).	
	B23	CHEN, C. S., et al., "Geometric Control of Cell Life and Death", Science, vol. 276, pp. 1425-1428 (1997).	
	B24	DEMERS, L. M., et al., "Direct Patterning of Modified Oligonucleotides on Metals and Insulators by Dip-Pen Nanolithography", Science, vol. 296, pp. 1836-1838 (2002).	

Examiner Signature

Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: October 11, 2005 (use as many sheets as necessary)		Application Number	10/788,414
		Filing Date	03/01/2004
		First Named Inventor	Chad A. Mirkin
		Group Art Unit	1641
		Examiner Name	Leon Yun Bon Lum
Sheet	2	of	3
		Attorney Docket Number	083847-0235

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Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	B25	HARDER, P., et al., "Molecular Conformation in Oligo(ethylene glycol)-Terminated Self-Assembled Monolayers on Gold and Silver Surfaces Determines Their Ability To Resist Protein Adsorption", J. Phys. Chem. B, vol. 102, pp. 426-436 (1998).	
	B26	HONG, S., et al., "Multiple Ink Nanolithography: Toward a Multiple-Pen Nano-lotter", Science, vol. 286, pp. 523-525 (1999).	
	B27	HOUSEMAN, B. T., et al., "Maleimide-Functionalized Self-Assembled Monolayers for the Preparation of Peptide and Carbohydrate Biochips", Langmuir, vol. 19, pp. 1522-1531 (2003).	
	B28	JONES, V. W., et al., "Microminiaturized Immunoassays Using Atomic Force Microscopy and Compositionally Patterned Antigen Arrays", Anal. Chem., vol. 70, no. 7, pp. 1233-1241 (1998).	
	B29	KENSETH, J. R., et al., "Investigation of Approaches for the Fabrication of Protein Patterns by Scanning Probe Lithography", Langmuir, vol. 17, pp. 4105-4112 (2002).	
	B30	LEE, K-B., et al., "Protein Nanostructures Formed via Direct-Write Dip-Pen Nanolithography", J. Am. Chem. Soc., no. 125, pp. 5588-5589 (2003).	
	B31	LEE, K-B., et al., "Protein Nanoarrays Generated by Dip-Pen Nanolithography", Science, vol. 295, pp. 1702-1705 (2002).	
	B32	LOCKHART, D. J., et al., "Genomics, gene expression and DNA arrays", NATURE, vol. 405, PP. 827-836 (2000).	
	B33	MACBEATH, G., "Printing Proteins as Microarrays for High-Throughput Function Determination", Science, vol. 289, pp. 1760-1763 (2000).	
	B34	MADOU, M. J., Fundamentals of Microfabrication, The Science of Miniaturization, 2 nd Ed., CRC Press, pp. 68-69 (Protein patterning).	
	B35	MADOU, M. J., Fundamentals of Microfabrication, The Science of Miniaturization, 2 nd Ed., CRC Press, pp. 159-169 (deposition & arraying methods of organic layers in BIOMEMS).	
	B36	MADOU, M. J., Fundamentals of Microfabrication, The Science of Miniaturization, 2 nd Ed., CRC Press, pp. 435-439 (primary, secondary, tertiary, and quaternary structures and synthesis by ribosomes).	
	B37	MADOU, M. J., Fundamentals of Microfabrication, The Science of Miniaturization, 2 nd Ed., CRC Press, pp. 447-452 (antibodies, antigens, and enzymes).	
	B38	MCKENDRY, R., et al., "Creating Nanoscale Patterns of Dendrimers on Silicon Surfaces with Dip-Pen Nanolithography", NanoLetters, vol. 2, pp. 713-716 (2002).	
	B39	NOY, A., et al., "Fabrication of Luminescent Nanostructures and Polymer Nanowires Using Dip-Pen Nanolithography", NanoLetters, no. 2, no. 2, pp. 109-112 (2002).	
	B40	O'Brien, J. C., et al., "Immunosensing Platforms Using Spontaneously Adsorbed Antibody Fragments on Gold", Anal. Chem., vol. 72, pp. 703-710 (2000).	
	B41	PAPRA, A., et al., "Characterization of Ultrathin Poly(ethylene glycol) Monolayers on Silicon Substrates", Langmuir, vol. 17, pp. 1457-1460 (2001).	
	B42	PINER, et al., "Dip-Pen" Nanolithography", Science, vol. 283, pp. 661-663 (1999).	
	B43	SCHENA, M., et al., "Quantitative Monitoring of Gene Expression Patterns with a Complementary DNA Microarray", Science, vol. 270, pp. 467-470 (1995).	
	B44	SCHWARTZ, P. V., "Molecular Transport from an Atomic Force Microscope Tip: A Comparative Study of Dip-Pen Nanolithography", Langmuir, vol. 18, pp. 4041-4046 (2002).	
	B45	SERVICE, R., "Biology Offers Nanotechs A Helping Hand", Science, vol. 298, pp. 2322-2323 (2002).	

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	B46	WADU-MESTHRIGE, K., et al., "Fabrication of Nanometer-Sized Protein Patterns Using Atomic Force Microscopy and Selective Immobilization", Biophys. J., vol. 80, pp. 1891-1899 (2001).	
	B47	WADU-MESTHRIGE, K., et al., "Immobilization of Proteins on Self-Assembled Monolayers", SCANNING, vol. 22, pp. 380-388 (2000).	
	B48	WEINBERGER, D. A., et al., "Combinatorial Generation and Analysis of Nanometer- and Micrometer-Scale Silicon Features via 'Dip-Pen' Nanolithography and Wet Chemical Etching", Adv. Mater., vol. 12, no. 21, pp. 1600-1603 (2000).	
	B49	WILSON, D. L., et al., "Surface organization and nanopatterning of collagen by dip-pen nanolithography", PNAS, vol. 98, no. 24, pp. 13660-13664 (2001).	
	B50	ZHANG, M., et al., "A MEMS nanoplotter with high-density parallel dip-pen nanolithography probe arrays", Nanotechnology, vol. 13, pp. 212-217 (2002).	

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